

WHAT IS CLAIMED IS:

1. A monitoring and recording system for a subject motor vehicle, comprising:  
a plurality of sensors that monitor and record vehicle parameters of a subject motor vehicle; and  
wherein at least one of the plurality of sensors is a distance sensor that measures the distance to motor vehicles in front of the subject motor vehicle at any instant in time.
2. The monitoring and recording system of claim 1 further including a system clock that provides a time reference for the monitoring and recording system.
3. The monitoring and recording system of claim 2, wherein at least one of the sensors is a GPS sensor capable of determining the latitude and longitude of the subject motor vehicle.
4. The monitoring and recording system of claim 2, wherein at least one of the sensors is a speed sensor capable of determining the speed of the subject motor vehicle over any interval of time.
5. The monitoring and recording system of claim 2, wherein at least one of the sensors is a fuel consumption sensor capable of measuring fuel consumption over any interval of time.
6. The monitoring and recording system of claim 2 further including a system computer in communication with the system clock and the plurality of sensors that includes at least a cryptographic co-processing unit the encrypts the data the system computer receives from the plurality of sensors and the system clock.
7. The monitoring and recording system of claim 2, wherein the system computer further includes a non-volatile memory unit that is operable to destroy the data encrypted by the cryptographic co-processor in a detectable manner if an unauthorized attempt to alter the encrypted data is made.

8. The monitoring and recording system of claim 2, wherein the system computer further includes an external memory device, wherein the external memory unit places recorded data on a computer-readable medium.

9. The monitoring and recording system of claim 8, wherein the external memory unit places recorded data on a computer-readable CD ROM.

10. The monitoring and recording system of claim 1 further comprising an input device for the manual input of data.

11. The monitoring and recording system of claim 10, wherein the input device is a keyboard.

12. The monitoring and recording system of claim 1 further comprising an output device.

13. The monitoring and recording system of claim 12, wherein the output device is a monitor.

14. The monitoring and recording system of claim 1 further comprising a communication unit capable of transmitting data from the subject motor vehicle system computer to another computer system via a communication network.

15. The monitoring and recording system of claim 1, wherein the system is installed in the subject motor vehicle.

16. A method for monitoring and recording the parameters of a subject motor vehicle, comprising the steps of:

activating a monitoring and recording system installed in a subject motor vehicle when the subject motor vehicle is started;

capturing, digitizing and sending information measured by a plurality of sensors to a CPU of a system computer at predetermined time intervals, wherein the plurality of sensors includes at least one distance sensor that measures the distance to other motor vehicles in front of the subject motor vehicle and the system

computer also includes a cryptographic co-processing unit, a non-volatile internal memory unit, and an external memory device;

storing the information obtained from the plurality of sensors for each of the time intervals in the non-volatile memory unit;

computing a hash value of the chunk of data according to one of the standard algorithms used in the art;

encrypting the hash value in the cryptographic co-processor according to a standard digital signature algorithm using a secret key stored in the non-volatile memory in order to obtain an encrypted value;

sending the encrypted value of the digital signature back to the CPU;

attaching the digital signature to the chunk of data that was hashed; and

directing the external memory device to write the data together with its digital signature onto a computer-readable medium.

17. The method for monitoring and recording the parameters of a subject motor vehicle according to claim 16 further comprising a retrieval process including the steps of:

a user entering a correct password and an index of the data that he or she desires to retrieve;

the CPU verifying the correct password was entered and retrieving and displaying on a monitor the desired information.

18. The method for monitoring and recording the parameters of a subject motor vehicle according to claim 16 further comprising a retrieval process including the steps of:

a judicial or financial authority receiving information collected by the system of the subject motor vehicle in computer readable form on a computer;

the judicial or financial authority entering a correct password and retrieving the public key matching private or secret key that has been used to compute the digital signature; and

the computer verifying the password, retrieving the desired information and displaying the retrieved data on a monitor.

19. The method for monitoring and recording the parameters of a subject motor vehicle according to claim 16 further comprising a retrieval process including the steps of:

- a clerk or another authorized by judicial or financial authority receiving data from the subject motor vehicle in computer readable form on a computer;

- the clerk entering a correct password into the computer;

- the system retrieving a public key matching the secret key that has been used to compute digital signature;

- the clerk entering a desired time period during which data was saved;

- the computer retrieving information from a geographical or financial database containing regulations from a database;

- the computer retrieving the vehicle's performance data from the data received and checking the measured parameters of the subject motor vehicle against the regulations; and

- the computer displaying all found discrepancies.